Amendments to the Claims

Claims 1-13. (Cancelled)

14. (Currently amended) A method of generating information about materials present in a composition utilizing a microscope, comprising:

utilizing a reagent to disperse a first portion at a first depth of the composition and thereby form a first solution comprising a dispersion of undissolved material;

filtering the first solution through a first substrate, at least some of the undissolved material being retained on the first substrate during the filtering;

forming a second solution comprising a dispersion of undisolved material from a second portion at a second depth of the composition;

filtering the second solution through a second substrate, at least some undissolved material being retained on the second substrate;

scanning across at least a portion of the first substrate with a microscope, the scanning comprising automated displacement of the first substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining a first set of data about said retained undissolved material at locations along the grid pattern, at least some of the obtained first set of data relating to a relative contrast of the retained undissolved material;

scanning across at least a portion of the second substrate with a microscope, the scanning comprising automated displacement of the second substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining a

second set of data about said retained undissolved material at locations along the grid pattern, at least some of the obtained second set of data relating to a relative contrast of the retained undissolved material;

processing the first set of data and the second set of data obtained by the microscope to generate information about one or more of the size, shape, type and quantity of undissolved material, undissolved material type being related to at least one of a conductivity, an oxide content and a carbon content of the undissolved material; and

depth profiling the composition, the depth profiling comprising comparing information generated from the first set of data to information generated from the second set of data.

15. (Previously presented) The method of claim 14 wherein the generated information is information about one or both of the size, and quantity of the undissolved material.

16. (Original) The method of claim 14 wherein the composition is a portion of a sputtering target.

17. (Original) The method of claim 14 wherein the processing calculates a concentration of the undissolved material in the composition.

18. (Original) The method of claim 14 wherein the undissolved material comprises one or more oxides, and wherein the processing calculates the concentration of oxides in the composition.

19. (Original) The method of claim 14 wherein the undissolved material comprises aluminum oxide, and wherein the processing calculates the concentration of aluminum oxide in the composition.

20. (Original) The method of claim 14 wherein the undissolved material comprises carbon, and wherein the processing calculates a concentration of carbon in the original composition.

21. (Original) The method of claim 14 wherein the dispersion comprises non-dissolved particulates and silicon in the solution; wherein the solution comprises dissolved metal; and wherein the silicon is passed through the substrate while at least some of the non-dissolved particulates are retained on the substrate as said retained undissolved material.

22. (Original) The method of claim 14 wherein the processing comprises digital image processing.

23. (Original) The method of claim 14 wherein the solution comprises one or more metals; and wherein the retained undissolved material comprises one or more oxides.

24. (Original) The method of claim 14 wherein the solution comprises one or more metals; and wherein the retained undissolved material comprises carbon.

25. (Previously presented) The method of claim 14 wherein the solution comprises one or more of aluminum, copper, lead, antimony and silicon, the one or more of aluminum, copper, lead, antimony and silicon being derived from the composition.

26. (Previously presented) The method of claim 14 wherein the solution comprises one or more metals derived from the composition, the only metals in the solution being selected from the group consisting of one or more of aluminum, copper, lead, and antimony.

27. (Previously presented) The method of claim 14 wherein the solution comprises aluminum derived from the composition.

28. (Previously presented) The method of claim 14 wherein the solution comprises aluminum and copper, the aluminum and copper being derived from the composition.

29. (Previously presented) The method of claim 14 wherein the only metals in the solution are selected from the group consisting of one or both of aluminum and copper, the aluminum and copper being derived from the composition.

30. (Previously presented) The method of claim 14 wherein the solution comprises copper derived from the composition.

31. (Previously presented) The method of claim 14 wherein the solution comprises copper and silver, the copper and silver being derived from the composition.

32. (Previously presented) The method of claim 14 wherein the solution comprises lead derived from the composition.

33. (Original) The method of claim 14 wherein the microscope is a light microscope.

34. (Original) The method of claim 14 wherein the microscope is an electron microscope.

35. (Previously presented) A method of generating information about materials present in a composition utilizing a microscope, comprising:

providing a composition comprising at least one of Sb, Pb and Sn;

selectively dissolving some components of the composition in a reagent while leaving other components undissolved;

collecting at least some of the undissolved components on a filter surface;

scanning across at least a portion of the filter surface with a light microscope, the scanning comprising automated displacement of the filter surface relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about scattering of light by the undissolved components on the filter surface, the undissolved components comprising at least two types, a first of the two types being darker than a background defined by the filter surface and a second of the two types being lighter than the background; and

digital image processing of the data obtained by the microscope to generate information about one or more of the size, quantity and aspect ratio of the undissolved components; the processing comprising a sort of the undissolved components amongst the two types.

36. (Original) The method of claim 35 wherein the composition is a metal having inclusions dispersed therein; wherein the dissolved components of the composition comprise the metal; and wherein the undissolved components comprise the inclusions.

37. (Original) The method of claim 35 further comprising displaying results of the processing as a histogram showing undissolved components by one or more of type, size and aspect ratio.

38. (Original) The method of claim 35 wherein the dissolved components of the composition comprise one or more metals; and wherein the undissolved components comprise one or more oxides.

39. (Previously presented) The method of claim 35 wherein the first type of undissolved components predominately comprises carbon and wherein the second type of the undissolved components predominately comprises one or more oxides.

40. (Previously presented) A method of generating information about impurities present in a metal composition utilizing a microscope, comprising:

utilizing a reagent to selectively dissolve a portion of the composition relative to at least some impurities present in the metal composition, the dissolved portion forming a solution with the reagent; the impurities being at least two different types; one of the at least two types being a first type comprising a first material, and another of the at least two types being a second type comprising a second material, the second material differing from the first material;

filtering the solution through a substrate, at some of the first and second types of the impurities being retained on the substrate during the filtering;

after the filtering, modifying a light absorbing property of at least some of the impurities retained on the substrate;

scanning across at least a portion of the substrate with a light microscope, the scanning comprising automated displacement of the substrate relative to an observing portion of the microscope along a grid pattern, the microscope obtaining data about the impurities at locations along the grid pattern, the data including a relative darkness of the impurities relative to a background defined by the substrate; the first type of impurities being darker than the background and the second type of impurities being lighter than the background; and

processing the data obtained by the microscope to generate information about the size, quantity and type of the impurities.

41. (Original) The method of claim 40 further comprising displaying results of the processing as a histogram showing impurities by one or more of type, size and quantity.

42. (Original) The method of claim 40 wherein the processing of the data obtained by the microscope comprises digital image processing.

43. (Original) The method of claim 40 wherein the dissolved portion of the metal composition comprises a mixture of aluminum and copper, and wherein the reagent is an acid comprising a mixture of hydrochloric acid and nitric acid.

44. (Original) The method of claim 40 wherein the first type of impurities predominately comprise carbon and wherein the second type of impurities predominately comprise one or more oxides.

Claims 45-58 (Cancelled).

59. (Previously presented) The method of claim 35 wherein the composition further comprises at least one of Cu and Al.